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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/696,042  
Filing Date: October 29, 2003  
Appellant(s): BENSON ET AL.

Matthew C. Lopponow (Regn. No. 45,314)  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 08/30/2007 appealing from the Office action mailed 05/02/2007.

**(1) Real Party in Interest**

A statement identifying the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

US 5,666,661	GRUBE ET AL.	9-1997
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US 6,865,372	MAUNEY ET AL.	3-2005
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3G TR 25.924 V1.0.0 (1999-12) Technical Report, "3rd Generation Partnership Project",  
Technical Specification Group Radio Access Network; Opportunity Driven Multiple Access (3G  
TR 25.924 version 1.0.0). (Filed by application in IDS on 10/29/2003)

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**DETAILED ACTION**

***Disposition of the claims***

- I. The current office-action is in response to the amendments/remarks filed on 11/13/2006. Accordingly, Claims 1-4 and 18 are cancelled, thus, Claims 5-17 and 19 are imminent for further assessment as follows:

***Claim Rejections - 35 USC § 102***

- II. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 5-11 are rejected under 35 U.S.C. 102 (b) as being anticipated by **Grube** et al.

[US 5666661].

As per claim 5, **Grube** teaches:

A method for operating a radiotelephone system, (Abstract), the method comprising:

At one or more mobile stations of the radiotelephone system, detecting other mobile stations to which radio propagation conditions are sufficiently good; (Col.3; 54-Col.4; 2, further explanation in Col.3; 18-34)

At the one or more mobile stations, communicating information about the detected mobile stations to a base station of the radiotelephone system; (Col.3; 54-Col.4; 2)

At a first mobile station, after detecting other mobile stations and after communicating information about the detected mobile stations, requesting communication with a second mobile station; (i.e. after detecting a predetermined threshold, start communicating directly; Col.3; 18-28, Col.2; 53-67) and

At a base station serving the first mobile station, if radio propagation conditions between the first mobile station and the second mobile station are sufficiently good, instructing the first mobile station and the second mobile station to establish direct communication. (i.e. If the geographic separation is less than the predetermined distance, the communication resource controller (101) transmits, on the control channel, a direct mode message to the units, wherein the direct mode message instructs the units to use the direct mode communication resource (122); Col.2; 53-67 and Claim 1; lines 28-41).

As per claim 6, Grube teaches:

The method of claim 5 further comprising: at the base station, receiving the communication request from the first mobile station; and from the information about the detected mobiles from the first mobile station and the second mobile station, determining if the first mobile station and the second mobile station may initiate direct communication. (Col.3; 54-Col.4; 2)

As per claim 7, Grube teaches:

The method of claim 4 further comprising: determining if each of the first mobile station and the second mobile station is a detected mobile of the other mobile station. (Col.3; 54-Col.4; 2)

As per claim 8, Grube teaches:

The method of claim 6 further comprising: at the base station, determining a location of the first mobile station; determining a location of the second mobile station; and determining information about relative proximity of the first mobile station and the second mobile station based on the location of the first mobile station and the location of the second mobile station. (Col.3; 54-Col.4; 2)

As per claim 9, Grube teaches:

The method of claim 5 wherein instructing the first mobile station and the second mobile station to establish direct communication comprises: initiating a first communication link between the base station and the first mobile station; communicating a direct communication instruction to the first mobile station; initiating a second communication link between the base station and the second mobile station; communicating a direct communication instruction to the second mobile station; terminating the first communication link and the second communication link. (Col.3; 54-Col.4; 9)

As per claim 10, Grube teaches:

The method of claim 5 wherein detecting other mobile stations comprises: detecting respective uplink transmissions from respective mobile stations to base stations of the radiotelephone system. (Col.2; 53-67 and Claim 1; lines 28-41).

As per claim 11, Grube teaches:

The method of claim 10 wherein detecting other mobile stations further comprises: determining a received signal strength for a detected uplink transmission from a mobile station; if the received signal strength exceeds a threshold, identifying the mobile station as a detected mobile station. (i.e. after detecting a predetermined threshold, start communicating directly; Col.3; 18-28, Col.2; 53-67, Col.3; 54-Col.4; 9)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 12, 14-17 & 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Grube** in view of **Mauney et al.** [US 6865372].



As per claim 12, **Grube** teaches all the particulars of the claim except at the first mobile station, in response to the instruction establish direct communication, entering a packet-based connectionless communication mode with the second mobile station. However, **Mauney** teaches in an analogous art, that the method of claim 5 further comprising: at the first mobile station, in response to the instruction establish direct communication, entering a packet-based connectionless communication mode with the second mobile station. (Col.67; 31-42 and Claim 1) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Grube including at the first mobile station, in response to the instruction establish direct communication, entering a packet-based connectionless communication mode with the second mobile station in order to provide a wireless handsets with enhanced functionality, including the ability to operate within a wireless network and in a direct handset-to-handset communication mode.

As per claim 14, Grube teaches:

A method for operating a base station in a radiotelephone system, the method comprising:

Receiving a request from a first mobile station to initiate a call with a second mobile station in the radiotelephone system; (i.e. Within the communication system 100, any of the communication units (102, 103) may initiate a communication by transmitting a message (119) and an identification code (120); Col.2; 44-50 and Claim 1; lines 20-27 further explanation in Col.2; 58-62: Grube)

Grube doesn't teach specifically, receiving, from respective mobile stations of the radiotelephone system, information about relay candidates of the respective mobile stations storing the information in respective relay candidate lists: after receiving information about relay candidates and storing the information in respective relay candidate lists, based at least in part on a relay candidate list associated with the first mobile station, determining if the second mobile station is physically close to the first mobile station; and if so, instructing the first mobile station and the second mobile station to enter a relay mode for direct link communication.

However, Mauney teaches in an analogous art, that receiving, from respective mobile stations of the radiotelephone system, information about relay candidates of the respective mobile stations storing the information in respective relay candidate lists: after receiving information about relay candidates and storing the information in respective relay candidate lists, based at least in part on a relay candidate list associated with the first mobile station, determining if the second mobile station is physically close to the first mobile station; and if so, instructing the first mobile station and the second mobile station to enter a relay mode for direct link communication. (e.g. updating the list based on the proximity candidate; Col.31; 66-Col.32; 10, Col.33; 66-Col.34; 21, further explanation in Col.41; 50-56)

As per claim 15, Grube teaches:

The method of claim 14 wherein instructing the first mobile station and the second mobile station to enter a relay mode comprises: communicating information about the relay mode a over a first link with the first mobile station; communicating information about the relay mode a over a second link with the second mobile station; and terminating both the first link and the second link. (Col.3; 29-52)

As per claim 16, Grube teaches all the particulars of the claim except receiving from respective mobile stations of the radiotelephone system information about relay candidates of the respective mobile stations; storing the information in respective relay candidate lists; and receiving updates from the respective mobile stations for updating the respective relay candidate lists. However, Mauney teaches in an analogous art, that the method of claim 14 further comprising: receiving from respective mobile stations of the radiotelephone system information about relay candidates of the respective mobile stations; storing the information in respective relay candidate lists; and receiving updates from the respective mobile stations for updating the respective relay candidate lists. (Col.31; 66-Col.32; 10, Col.33; 66-Col.34; 21)

As per claim 17, Grube teaches:

A radiotelephone (Abstract), comprising:

A radio communication circuit configured for two-way radio communication with remote radio devices; (i.e. within the communication system 100, any of the communication units (102, 103) may initiate a communication by transmitting a message (119) and an identification code (120); Col.2; 44-50 and Claim 1; lines 20-27)

Means for detecting other radiotelephones to which radio propagation conditions are sufficiently good (i.e. after detecting a predetermined threshold, start communicating directly; Col.3; 18-28, Col.2; 53-67) and

A controller configured to control the radio communication circuit to establish a radio link to a remote base station to convey a request for communication with another radiotelephone and to receive over the radio link a direct communication instruction, (Col.2; 58-62) and further configured to control the radio communication circuit to interrupt the radio link and establish a relay radio link with the other radiotelephone in response to the direct communication instruction. (i.e. If the geographic separation is less than the predetermined distance, the communication resource controller (101) transmits, on the control channel, a direct mode message to the units, wherein the direct mode message instructs the units to use the direct mode communication resource (122); Col.2; 53-67 and Claim 1; lines 28-41).

Grube doesn't teach specifically, generated by the remote base station in dependence on a relay candidate list, wherein the radio telephone further comprises: a memory configured to store information about the detected radiotelephones in the relay candidate list, the controller being further configured to control the radio communication circuit to establish a radio link to the remote base station to convey the relay candidate list to the remote base station (Col.2; 58-62; Grube). However, Mauney teaches in an analogous art, that generated by the remote base station in dependence on a relay candidate list, wherein the radio telephone further comprises: a memory configured to store information about the detected radiotelephones in the relay candidate list, the controller being further configured to control the radio communication circuit to establish a radio link to the remote base station to convey the relay candidate list to the remote base station. (e.g. updating the list based on the proximity candidate; Col.31; 66-Col.32; 10, Col.33; 66-Col.34; 21, further explanation in Col.41; 50-56)

As per claim 19, Grube teaches all the particulars of the claim except the controller is further configured to control the radio communication circuit to detect radio transmissions from other radiotelephones and, in response to the detected uplink transmissions, to populate the relay candidate list. However, Mauney teaches in an analogous art, that the radiotelephone of claim 17 wherein the controller is further configured to control the radio communication circuit to detect uplink radio transmissions from other radiotelephones and, in response to the detected uplink transmissions, to populate the relay candidate list. (Col.31; 66-Col.32; 10, Col.33; 66-Col.34; 21)

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grube in view of 3G TR 25.924 V1.0.0 (1999-12) Technical Report, "3<sup>rd</sup> Generation Partnership Project; Technical Specification Group Radio Access Network; Opportunity Driven Multiple Access (3G TR 25.924 version 1.0.0) hereinafter Technical report.

As per claim 13, Grube teaches all the particulars of the claim except the packet-based connectionless communication mode comprises entering an Opportunity Driven Multiple Access relay mode. However, Technical report teaches in an analogous art, that the method of claim 12 wherein packet-based connectionless communication mode comprises entering an Opportunity Driven Multiple Access relay mode. (Pg.5; 1: Scope and 4: Opportunity Driven Multiple Access) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Grube including packet-based connectionless communication mode comprises entering an Opportunity Driven Multiple Access relay mode in order to provide a technique of communication based on Opportunity Driven Multiple Access system.

#### **(10) Response to Argument**

A. Grube does not disclose at one or more mobile stations of the radiotelephone system, detecting other mobile stations to which radio propagation conditions are sufficiently good and at the base station, if the radio propagation conditions between the first mobile station and the second mobile station are sufficiently good, instructing the first mobile station and the second mobile station to establish direct communication.

In response to appellant's argument (On page 6, lines 18-22 of Appeal Brief), that Grube doesn't teach, "at one or more mobile stations of the radiotelephone system, detecting other mobile stations to which radio propagation conditions are sufficiently good." it is noted that

Grube supports the assertion as, "Having obtained the distance relationship, the communication resource controller then determines whether that relationship is favorable to a predetermined threshold (202). The predetermined threshold is typically a distance parameter, which is derived from the transmitting power of the communication units when in a direct mode... If the distance relationship is favorable to the predetermined threshold (202), the communication resource controller transmits a mode change message, or a direct mode message, to the communication units (203). The mode change message indicates that the units should switch to, or operate in, a direct mode of operation." (Grube, Col.3; 18-34), which also corresponds to the claimed limitation as "At a base station serving the first mobile station, if radio propagation conditions between the first mobile station and the second mobile station are sufficiently good, instructing the first mobile station and the second mobile station to establish direct communication." Since, the radio propagation condition (as claimed) is a broad term which can be affected by distance, signal-strength, signal-to-noise-ratio, bit error rates, attenuation factors etc. Thus, as Grube advocates, a distance parameter, which is derived from the transmitting power of the communication units, can easily read as radio propagation condition such that the distance relationship between two mobile terminals are within a predetermined threshold can read on radio propagation conditions are sufficiently good as defined in claim 5. Also the communication resource controller transmits the mode change instructions to one or more mobile units, is well suited for the later limitation (e.g. if the radio propagation conditions between the first mobile station and the second mobile station are sufficiently good, instructing the first mobile station and the second mobile station to establish direct communication) in claim 5.

Furthermore, appellant example on page 7 of appeal brief is misleading. Appellant pointed out that a distance does not guarantee radio propagation conditions that are sufficiently good because environmental conditions, such as a wall or other obstacles between two mobile stations, affect radio propagation conditions and such environmental conditions often cause poor radio propagation conditions, regardless of a favorable distance relationship. It appears that environmental conditions could also affect the radio propagation condition even though we interpret the radio propagation condition as signal-strength, i.e., signal strength does not guarantee radio propagation conditions that are sufficiently good if network loads are high.

Hence, it is believed that GRUBE discloses or suggests the broad claimed limitations as recited in claim 5 as explained in above.

Since, claims 6-13 depends from claim 5, consequently the response is the same explanation as set forth above with regard to claim 5.

With the intention of that explanation, it is believed and as enlighten above, the refutation are sustained.

B. Grube does not disclose anything about a method for operating a base station in a radiotelephone system, the method comprising at least receiving, from respective mobile stations of the radiotelephone system, information about relay candidates of the respective mobile stations, storing the information in respective relay candidate lists, and instructing the first mobile station and the second mobile station to enter a relay mode for direct link communication and such is admitted by the Office Actions.

In response to appellant's argument (On page 11, lines 26-31 of Appeal Brief), that Grube doesn't teach, "a method for operating a base station in a radiotelephone system, the method



comprising at least receiving, from respective mobile stations of the radiotelephone system." it is noted that Grube supports the assertion as, "Having obtained the distance relationship, the communication resource controller then determines whether that relationship is favorable to a predetermined threshold (202)... If the distance relationship is favorable to the predetermined threshold (202), the communication resource controller transmits a mode change message, or a direct mode message, to the communication units (203). The mode change message indicates that the units should switch to, or operate in, a direct mode of operation." (Grube, Col.3; 18-34), which corresponds to the claimed limitation as "a method for operating a base station in a radiotelephone system, the method comprising at least receiving, from respective mobile stations of the radiotelephone system." Since, obtained the distance relationship at the communication resource controller then transmits the mode change message to the mobile units if the relationship is favorable to a predetermined threshold, Grube clearly teaches the communication resource controller for at least receiving, from respective mobile stations of the radiotelephone system, information about relay candidates of the respective mobile stations.

Furthermore, in response to appellant's argument (On page 12, lines 1-2 of Appeal Brief), that Mauney doesn't teach, "any method for operating a base station using relay candidate lists", the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). It is noted that Grube supports the assertion as, "Within the communication system 100, any of the communication units (102, 103) may

initiate a communication by transmitting a message (119) and an identification code (120). This message (119) may indicate a particular communication request, such as a group call, or private call, where the identification code may indicate an individual unit's code or a group code.

Regardless of whether the request is for a private call or a group call, the communication resource controller (101) identifies the target communication unit or units by the identification code. Knowing the initiating and target communication units, the communication resource controller (101) can then determine the geographic locations of each of the communication units. With this information, the resource controller can then determine the geographic separation of the units. If the geographic separation is greater than a predetermined distance, the communication resource controller (101) allocates a system communication resource (106-112) to the units. If the geographic separation is less than the predetermined distance, the communication resource controller (101) transmits, on the control channel, a direct mode message to the units, wherein the direct mode message instructs the units to use the direct mode communication resource (122)." (Col.2; 44-68: Grube). Thus, Grube advocates the direct mode list to the mobile units to operate in direct mode communication. In conjunction to the Mauney, which has a list saved in to the mobile unit which periodically updates with the received control/registry channel with the system (as disclosed by Mauney in Col.41; 50-56; in the embodiment of FIGS. 12A and 12B, ... In particular, an idle handset can tune to the registry channel and maintain updates on other handsets on its Find list, so that when the FIND key is pressed, the direct queries of the handsets can begin without listening for the predetermined cycle time; and, thus, shortening the overall time required for a find procedure). Thus, one skill in the art would recognize to modify the resource controller of Grube as per teaching of Mauney

in order to shortening the overall time required for a find procedure. Hence, it is believed that combination of Mauney with GRUBE does disclose or suggest as explained in above rejected claims.

Since, claims 15-16 depends from claim 14, consequently the response is the same explanation as set forth above with regard to claim 14.

With the intention of that explanation, it is believed and as enlighten above, the refutation are sustained.

C. Grube does not disclose the controller being further configured to control the radio communication circuit to establish a radio link to the remote base station to convey the relay candidate list to the remote base station.

In response to appellant's argument.(On page 13, lines 21-24 of Appeal Brief), that Grube doesn't teach, "the controller being further configured to control the radio communication circuit to establish a radio link to the remote base station to convey the relay candidate list to the remote base station." it is noted that Grube supports the assertion as, "If the geographic separation is greater than a predetermined distance, the communication resource controller (101) allocates a system communication resource (106-112; Fig.1) to the units. If the geographic separation is less than the predetermined distance, the communication resource controller (101) transmits, on the control channel, a direct mode message to the units, wherein the direct mode message instructs the units to use the direct mode communication resource (122)." (Col.2; 58-62: Grube). Thus Grube advocates the communication resource controller (101) allocates a

**system communication resource (106-112; Fig.1) to the units to convey the list to the mobile**

**units**. In conjunction to the Mauney, which has a list saved in to the mobile unit which periodically updates with the received control/registry channel with the system (as disclosed by Mauney in Col.41; 50-56; in the embodiment of FIGS. 12A and 12B, ... In particular, an idle handset can tune to the registry channel and maintain updates on other handsets on its Find list, so that when the FIND key is pressed, the direct queries of the handsets can begin without listening for the predetermined cycle time; and, thus, shortening the overall time required for a find procedure). Thus, one skill in the art would recognize to modify the resource controller of Grube in conveying the relay candidate list to remote terminal as per teaching of Mauney in order to maintain updates on other terminal. Hence, it is believed that combination of Mauney with GRUBE does disclose or suggest as explained in above rejected claims.

Since, claim 19 depends from claim 17 consequently the response is the same explanation as set forth above with regard to claim 17

With the intention of that explanation, it is believed and as enlighten above, the refutation are sustained.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Application/Control Number:  
10/696,042  
Art Unit: 2617


Page 20

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Sharad Rampuria/

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